

AMENDMENTS TO THE CLAIMS

Please amend the claims of the present application as set forth below.

Changes to the claims are shown by strikethrough (for deleted matter) or

5 underlining (for added matter).

Claim History Summary:

Claims 1-19 were originally filed.

In an Office Action of July 20, 2004, the Office allowed claims 10-17;
objected to claims 8, 9 and 19; and rejected claims 1-7 and 18.

10 Summary of Present Response

Claims 1, 8, 9, 18 and 19 are currently amended;

original claims 8, 9 and 19 (including prior dependencies) have been
represented as new claims 20, 21 and 22, respectively; and

new claims 23-25 have been added (pertaining to the subject matter of
15 original claims 5-7, respectively).

Claims 1-25 are thus currently pending.

Detailed Listing of All Claims 1-25:

1 (Currently amended). A turbocharger assembly comprising:

a turbine housing;

a turbine wheel rotatably disposed within the turbine housing and

5 attached to a shaft;

a center housing connected to the turbine housing and carrying the shaft;

a compressor housing attached to the center housing;

a compressor rotatably disposed within the compressor housing and

attached to the shaft, the compressor comprising two impellers in back to back

10 orientation with one another, the compressor housing including at least one air

inlet for directing air into the compressor housing and to the compressor

impellers; and

means for restricting a passage for controlling the flow of air flow wherein

the passage is positioned between a compressor impeller and a volute within

15 the compressor housing.

2 (Original). The turbocharger assembly as recited in claim 1 wherein the
compressor housing includes two separate air inlets that are in air flow
communication with respective compressor impellers.

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3 (Original). The turbocharger assembly as recited in claim 2 wherein the air
inlets are oriented to receive air axially with respect to the compressor.

4 (Original). The turbocharger assembly as recited in claim 2 wherein the air inlets are oriented to receive air radially with respect to the compressor.

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5 (Original). The turbocharger assembly as recited in claim 1 wherein the compressor housing comprises a single common air inlet that is in air flow communication with respective compressor impellers.

10 6 (Original). The turbocharger assembly as recited in claim 5 wherein the air inlet is oriented to receive air axially with respect to the compressor.

7 (Original). The turbocharger assembly as recited in claim 5 wherein the air inlet is oriented to receive air radially with respect to the compressor.

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8 (Currently amended). The turbocharger assembly as recited in claim 1 wherein the means for ~~controlling~~ restricting comprises an annular member that is movably disposed within the compressor housing, ~~and that is positioned downstream of the compressor to control the flow of pressurized air within the~~
20 ~~compressor.~~

9 (Currently amended). The turbocharger assembly as recited in claim 8 wherein the annular member is movably disposed within a wall section of the compressor housing and is positioned to ~~control~~ restrict the flow of pressurized air from one of the compressor impellers when placed in an actuated position.

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10 (Original). A turbocharger assembly comprising:

a turbine housing;

a turbine wheel rotatably disposed within the turbine housing and attached to a shaft;

10 a center housing connected to the turbine housing and carrying the shaft;

a compressor housing attached to the center housing;

a compressor rotatably disposed within the compressor housing and attached to the shaft, the compressor comprising two impellers in back to back orientation with one another, the compressor housing including at least one air

15 inlet in air flow communication with each of the compressor impellers; and

an annular member moveably disposed within a wall cavity of the compressor housing downstream of the compressor for controlling the flow of pressurized air from one of the compressor impellers when placed in an actuated position.

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11 (Original). The turbocharger assembly as recited in claim 10 wherein the compressor housing includes two separate air inlets that are in air flow communication with respective compressor impellers.

5 12 (Original). The turbocharger assembly as recited in claim 11 wherein the air inlets are arranged to receive air axially into the compressor housing with respect to the compressor, and are in communication with separate air passages within the compressor housing that are each in air flow communication with respective compressor impellers.

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13 (Original). The turbocharger assembly as recited in claim 11 wherein the air inlets are oriented to receive air radially with respect to the compressor, and are in communication with separate air passages within the compressor housing that in air flow communication with respective compressor impellers.

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14 (Original). The turbocharger assembly as recited in claim 10 wherein the compressor housing comprises a single common air inlet that is in air flow communication with respective compressor impellers.

20 15 (Original). The turbocharger assembly as recited in claim 14 wherein the air inlet delivers air axially into the compressor housing with respect to the compressor, and is in communication with two concentrically arranged air

passages that are each in air flow communication with respective compressor impellers.

16 (Original). The turbocharger assembly as recited in claim 14 wherein the air
5 inlet delivers air radially into the compressor housing with respect to the
compressor, and is in communication with two air passages that are each in air
flow communication with respective compressor impellers.

17 (Original). A turbocharger assembly comprising:
10 a turbine housing;
a turbine wheel rotatably disposed within the turbine housing and
attached to a shaft;
a center housing connected to the turbine housing and carrying the shaft;
a compressor housing attached to the center housing;;
15 a compressor rotatably disposed within the compressor housing and
attached to the shaft, the compressor comprising two impellers in back to back
orientation with one another, the compressor housing having a volute
positioned concentrically around the compressor and including a single air inlet
that is in air flow communication with two concentrically oriented air flow
20 passages, each air flow passage being in air flow communication with
respective compressor impellers; and

an annular member moveably disposed within a wall cavity of the compressor housing interposed between the compressor and the volute for controlling the flow of pressurized air from one of the compressor impellers when placed in an actuated position.

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18 (Currently amended). A method for providing pressurized air for combustion by an internal combustion engine, the method comprising:

directing exhaust gas from the internal combustion engine to a turbine housing of a turbocharger to rotate a turbine wheel rotatably disposed therein,
10 wherein the rotation of the turbine wheel causes a compressor to also rotate within a compressor housing;

directing air into the compressor housing and to the compressor, the compressor comprising two back to back oriented impellers to produce pressurized air; and

15 ~~controlling~~ restricting a passage for air flow wherein the passage is positioned between a compressor impeller and a volute ~~the flow of pressurized air exiting the compressor housing from at least one of the impellers depending on the operating conditions of the internal combustion engine.~~

20 19 (Currently amended). The method as recited in claim 18 wherein the step of ~~controlling~~ restricting comprises actuating an annular member that is movably

disposed within the compressor housing to project into the passage for an air
~~flow path downstream of the compressor.~~

20 (New). A turbocharger assembly comprising:

5 a turbine housing;

a turbine wheel rotatably disposed within the turbine housing and
attached to a shaft;

a center housing connected to the turbine housing and carrying the shaft;

a compressor housing attached to the center housing;

10 a compressor rotatably disposed within the compressor housing and
attached to the shaft, the compressor comprising two impellers in back to back
orientation with one another, the compressor housing including at least one air
inlet for directing air into the compressor housing and to the compressor
impellers; and

15 means for controlling the flow of air within the compressor housing
wherein the means for controlling comprises an annular member that is
movably disposed within the compressor housing, and that is positioned
downstream of the compressor to control the flow of pressurized air within the
compressor.

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21 (New). The turbocharger assembly as recited in claim 20 wherein the
annular member is movably disposed within a wall section of the compressor

housing and is positioned to control the flow of pressurized air from one of the compressor impellers when placed in an actuated position.

22 (New). A method for providing pressurized air for combustion by an

5 internal combustion engine, the method comprising:

directing exhaust gas from the internal combustion engine to a turbine housing of a turbocharger to rotate a turbine wheel rotatably disposed therein, wherein the rotation of the turbine wheel causes a compressor to also rotate within a compressor housing;

10 directing air into the compressor housing and to the compressor, the compressor comprising two back to back oriented impellers to produce pressurized air; and

controlling the flow of pressurized air exiting the compressor housing from at least one of the impellers depending on the operating conditions of the
15 internal combustion engine wherein the step of controlling comprises actuating an annular member that is movably disposed within the compressor housing to project into an air flow path downstream of the compressor.

23 (New). A turbocharger assembly comprising:

20 a turbine housing;

a turbine wheel rotatably disposed within the turbine housing and attached to a shaft;

a center housing connected to the turbine housing and carrying the shaft;

a compressor housing attached to the center housing;

a compressor rotatably disposed within the compressor housing and
attached to the shaft, the compressor comprising two impellers in back to back
5 orientation with one another, the compressor housing including at least one air
inlet for directing air into the compressor housing and to the compressor
impellers; and

means for controlling the flow of air within the compressor housing
wherein the compressor housing comprises a single common air inlet that is in
10 air flow communication with respective compressor impellers whereby air
entering the air inlet is bifurcated and directed by the compressor housing to
one compressor impeller from a first direction and to the other compressor
impeller from a second substantially opposing direction.

15 24 (New). The turbocharger assembly as recited in claim 23 wherein the air
inlet is oriented to receive air axially with respect to the compressor.

25 (New). The turbocharger assembly as recited in claim 23 wherein the air
inlet is oriented to receive air radially with respect to the compressor.